

AMENDMENTS TO THE SPECIFICATION

On Page 1, please **add** the following after the title and before the original first paragraph:

CROSS-REFERENCE TO RELATED APPLICATIONS

This is a national stage under 35 USC § 371 of International Application PCT/JP2005/006120, filed on March 30, 2005, which claims priority benefit of Japanese Patent Application No. 2004-119810 filed April 15, 2004 and Japanese Patent Application No. 2004-219500 filed July 28, 2004. The entire contents of those applications are hereby incorporated by reference herein.

On page 3, please replace the paragraph starting at line 30 with the following paragraph:

In a preferred embodiment, the plurality of process liquid supply nozzles are divided into a first group and a second group, the process liquid supply nozzles belonging to the first group are arranged at different levels on one side of the process object, and the process liquid supply nozzles belonging to the second group are arranged at different levels on another side of the process object. In this embodiment, the plurality of process liquid supply nozzles are preferably arranged so that the first group includes process liquid supply nozzles each located at a level corresponding to that of each of the process liquid supply nozzles belonging to the second group. The liquid treatment may be a treatment that treats the process object with a chemical liquid as the process liquid. The controller may be configured to control the process liquid supply valves so that one of the process liquid supply nozzles of the first group and one of the process liquid supply nozzles of the second group, which are arranged at the same level, simultaneously discharge the process liquid at least in a part of the plurality of process liquid supply periods. Alternatively, the controller may be configured to control the process liquid supply valves so that the following conditions are alternately achieved repeatedly at least in a part of the plurality of process liquid supply periods: a condition in which one of the process liquid supply nozzles belonging to the first group discharges the chemical liquid while the process liquid supply nozzle belonging to the second group arranged at a level corresponding to that of the one of the process liquid supply nozzles belonging to the first

group does not discharge the chemical liquid; and a condition in which one of the process liquid supply nozzles belonging to the second group discharges the chemical liquid while the process liquid supply nozzle belonging to the first group arranged at a level corresponding to that of the one of the process liquid supply nozzles belonging to the second group does not discharge the chemical liquid. The liquid treatment may also be a treatment that treats the process object with a rinse liquid as the process liquid. In this case, the controller may be configured to control the process liquid supply valves so that, at least in one of the plurality of process liquid supply periods, one of the process liquid supply nozzles belonging to the first group discharges the ~~chemical liquid~~ rinse liquid while the process liquid supply nozzle belonging to the second group arranged at a level corresponding to that of the one of the process liquid supply nozzles belonging to the first group does not discharge the ~~chemical liquid~~ rinse liquid.

On page 14, please replace the paragraph starting at line 3 with the following paragraph:

Then, the process liquid supply valves (hereinafter referred to simply as “valves” below) 20 are switched in a manner described below in accordance with a predetermined process liquid supply sequence, so as to perform a chemical liquid treatment process. At first, only the valves 21R and 21L are opened to discharge the DHF from the lowermost process liquid supply nozzles (hereinafter referred to simply as “nozzles” below) 11R and 11L, so that a first chemical liquid treatment step (first etching treatment step) is performed (see Fig. 3(a)). After the first etching treatment step is performed for a certain period of time, the valves 21R and 21L are closed, and only the valves 22R and 22L are opened to discharge the DHF from the nozzles 12R and 12L second from the bottom, so that a second chemical liquid treatment step (second etching treatment step) is performed (see Fig. 3(b)). After the second etching treatment step is performed for a certain period of time, the valves 22R and 22L are closed, and only the valve 23R and 23L are opened to discharge the ~~process liquid~~ DHF from the nozzles 13R and 13L third from the bottom, so that a third chemical liquid treatment step (third etching treatment step) is performed (see Fig. 3(c)). After the third etching treatment step is performed for a certain period of time, the valves 23R and 23L are closed, and only the valves 24R and 24L are opened to discharge the DHF from the uppermost nozzles 14R and 14L, so that a fourth chemical liquid treatment step (fourth etching treatment step)

is performed for a certain period of time (see Fig. 3(d)). In this manner, the chemical liquid treatment process (etching treatment process) is completed.

On page 17, please replace the paragraph starting at line 15 with the following paragraph:

In the rinse liquid treatment shown in Figs. 8 to 10, before the first rinse liquid treatment step is performed, in other words, before the DIW is discharged from the lowermost nozzles 11R and 11L, the DIW may be discharged from all the nozzles ~~21R, 22R, 11R, 12R,~~ 13R, 14R, 11L, 12L, 13L and 14L. In this case, the period of time during which the DIW is discharged may be determined so that it ensures that the DHF remaining in the respective process liquid supply nozzles 10 and the pipes upstream the same are removed therefrom. If the remaining DHF is purged beforehand in this way, the replacement of the DHF can be carried out effectively.

On page 19, please replace the paragraph starting at line 21 with the following paragraph:

In order to maintain the HF concentration in the DHF constant, the first and second open-close valves 37a and 37b are selectively opened in accordance with a control signal from the CPU 5 (control computer). In this embodiment, when two process liquid supply valves (for example, valves 21R and 21L) are opened to supply the DHF only from two process liquid supply nozzles (for example, nozzles 11R and 11L), a total flow rate of the DHF supplied to a process bath 1 is 20L/min. When one of the supply valves 21R to 24R and 21L to 24L is opened to supply the DHF from only one of the supply nozzles 11R to 14R and 11L to 14L, a total flow rate of the DHF supplied to the process bath 1 is 10L/min. The first and second open-close valves 37a and 37b are switched so that the HF concentration in the DHF being supplied to the process bath 1 in both cases is the same. That is, when the DHF is supplied from the two nozzles 11R and 11L, the first open-close valve 37a for a high flow rate is opened to allow the HF to flow at 2L/min into the process liquid supply line 4. When the DHF is supplied from only one nozzle 10 for example, the supply nozzle 11R), the second open-close valve 37b for a low flow rate is opened to allow the HF to flow

at 1L/min into the ~~first supply line~~ process liquid supply line. Thus, the HF concentrations in the DHF in both the former and latter cases can be the same.

On page 22, please replace the paragraph starting at line 18 with the following paragraph:

The third embodiment is described with reference to Fig. 7. Fig. 7 is a piping diagram showing parts, of a liquid treatment apparatus in the second embodiment, which are different from those of the first embodiment. Parts, of the liquid treatment apparatus in the second embodiment, which are now shown in ~~Fig. 4~~ Fig. 7 are the same as those of the liquid treatment apparatus in the first embodiment, and thus the detailed description thereof are omitted.